

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Detering et al.

Serial No.: 10/633,464

Filed: July 31, 2003

For: FAST QUENCH REACTOR AND
METHOD

Confirmation No.: 7420

Examiner: S. Kastler

Group Art Unit: 1742

Attorney Docket No.: EGG-PI-413 RE/RE

AMENDMENT ACCOMPANYING REQUEST FOR CONTINUED EXAMINATION

Mail Stop RCE
Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Sir:

The following amendments and remarks are filed in response to the Examiner's remarks in the Final Office Action mailed February 3, 2006, the three-month shortened statutory period for response to which expires on May 3, 2006.

Amendments to the Claims are set forth on page 2 of this paper.

Remarks begin on page 3 of this paper.

Statement Regarding the Claims - (Note to Legal Instruments Examiner)

Because the present application is a Reissue Application, only the claims being amended herein are required to be set forth herein. A listing of claims is not required (or even deemed appropriate). See 37 CFR 1.173.

Please amend claim 36 as set forth hereinbelow.

Listing of Claims:

36. (Twice Amended) The method of claim 35 [[31]], further comprising [[wherein the]] [step of rapidly cooling the desired end product is accomplished by use of a] [[*converging-diverging* nozzle [having] *has* a converging section and a diverging section respectively leading to and from a restrictive open throat,]] configuring the diverging section of the nozzle [[having]] to exhibit a substantially conical configuration with an included angle of less than about 35°.

REMARKS

The Final Office Action mailed February 3, 2006, has been received and reviewed. Claims 1 through 14, and 18 through 73 are currently pending in the application. Claims 1 through 14, and 18 through 73 stand rejected. Applicants have amended claim 36 and respectfully request reconsideration of the application as amended herein and in view of the arguments set forth below.

Amendments to the Claims

Claim 36 has been amended herein to add the word “angle” after the phrase “...conical configuration with an included” in the last sentence such that the phrase now reads: “...conical configuration with an included angle of less than about 35°.” Applicants submit that claim 36 has not been amended in terms of the subject matter set forth thereby and, further, submit that citation to specific passages of the specification is not required for support of the amendments.

Moreover, the amendment to claim 36 above should be entered by the Examiner because the amendment is supported by the as-filed specification and drawings and does not add any new matter to the application.

Information Disclosure Statements and Duty of Disclosure

The Examiner has commented on Applicant's submittal of Information Disclosure Statements stating the following:

The Examiner acknowledges receipt of the lengthy information disclosure statements filed 01/06/2006 and 07/31/2003 together totaling 113 reference documents. There is no requirement that applicants explain the materiality of English language references, however the cloaking of a clearly relevant reference in a long list of references may not comply with applicants' duty to disclose, see Penn Yan Boats, Inc. v. Sea Lark Boats, Inc., 359 F. Supp. 948, aff'd 479 F.2d 1338. There is no duty for the Examiner to consider these references to a greater extend than those ordinarily looked at during a regular search by the Examiner. Accordingly, the Examiner has considered these references in the same manner as references encountered during a normal search of Office search files. (Final Action, page 2).

Applicant notes that the present reissue application is part of a family of related applications and issued patents, including numerous foreign applications. As the Examiner is well aware, Applicant is required under 37 CFR 1.56 to disclose information material to patentability. As set forth in MPEP sections 2001.06(a) and (b), such information includes prior art cited in related foreign applications and information relating to or from copending United States patent applications. Applicant's undersigned attorney affirmatively asserts that no attempts have been made to cloak a clearly relevant reference within the Information Disclosure Statements that have been submitted in association with the present application. Rather, all submissions of prior art references in the present reissue application have been made in an effort to comply with Applicant's duty of disclosure.

Rejection of Claims based on a Defective Reissue Declaration

The Examiner has rejected claims 1 through 14, and 18 through 73 as being based on a defective reissue declaration. The Examiner indicates that Applicant has failed to identify a *specific* error which is correctable by a reissue application. Applicant submits herewith a newly executed Declaration which specifically sets forth various errors sought to be corrected by the present reissue application. As stated in the Declaration, such errors include various amendments to the claims regarding the correction of antecedent basis and compliance with 35 U.S.C. § 112 and 37 CFR 1.75(c), including, in numerous instances, corrections to affirmatively recite method acts or structural limitations, depending on the statutory class of the particular claim being amended.

For example, with respect to claim 38, the newly submitted Declaration states the following:

Claim 38 previously included the limitations that “the desired end product is titanium metal and the at least one reactant comprises titanium tetrachloride and hydrogen.” The mere recitation of an identified “end product” and a “reactant” might be interpreted as failing to further limit the claim(s) from which claim 38 depends as is required by 37 CFR 1.75(c). Furthermore, such limitations may not be seen as satisfying the requirements of 35 U.S.C. § 112 since claim 38 might be interpreted as reciting system/apparatus limitations while the statutory class of the claim is that of a method or

process. Claim 38 has been amended in the present reissue application to recite:

38. The method of claim 31, wherein retaining the desired end product within the flowing gaseous stream includes retaining [[is]] titanium metal and wherein introducing the reactant stream includes introducing [[the]] [reactants are] [[at least one reactant comprises]] titanium tetrachloride and hydrogen.

The inclusion of affirmative method acts in claim 38 provides for proper interpretation of the claim and unambiguous compliance with 35 U.S.C. § 112 and 37 CFR 1.75(c).

Applicant submits that such errors are appropriate for correction by a reissue application.

Still considering claim 14 as a example, it is noted that potential ambiguities in claims, particularly when method and apparatus limitations are intermixed in a given claim, may render a claim invalid. (*See IPXL Holdings LLC v. Amazon.com Inc.*, 72 USPQ2d 1469 (E.D. Va, 2004). Specifically, the Court stated the following:

Under 35 U.S.C. §112(2), a claim must “particularly point[] out and distinctly claim[] the subject matter which the applicant regards as his invention.” Furthermore, 35 U.S.C. §101 defines the various classes of subject matter eligible for patenting. As interpreted by the courts, apparatuses (which includes “systems”) and processes (or “methods”) are both classes of patent eligible subject matter under 35 U.S.C. §101 and may both be claimed in the same patent. This occurs, for example, in patents that claim both an apparatus and a method of using the apparatus. Such patents contain separate sets of claims ...directed towards the two different classes of invention. However, “combining two separate statutory classes of invention *in a single claim* is not sufficiently precise to provide competitors with an accurate determination of the ‘metes and bounds’ of protection involved.” *Ex parte Lyell*, No. 89-0461, 1990 WL 354583, at *5 (Bd. Pat. App. & Inter. Apr. 9, 1990) (emphasis added). Consequently, an invention “which purports to be both an apparatus and a process *in a single claim*, is ambiguous and properly rejected” as indefinite under 35 U.S.C. §112(2). *Id.* at *6 (emphasis added).

Additionally, with respect to claim 38, the recitation that “the desired end product is titanium metal and the at least one reactant comprises titanium tetrachloride and hydrogen”

arguably does not further limit claim 31 from which claim 38 depends as required by 37 CFR. 1.75(c). Rather, at best, such a recitation might be considered as adding to the statement of purpose set forth in the *preamble* of claim 31 which recites “[a] method for thermally converting one or more *reactants* in a thermodynamically stable high temperature gaseous stream to a *desired end product* in the form of a gas or ultrafine solid particles...” As noted in MPEP 2111.02, “[i]f the body of a claim fully and intrinsically sets forth all of the limitations of the claimed invention, and the preamble merely states, for example, the purpose or intended use of the invention, rather than any distinct definition of any of the claimed invention’s limitations, then the preamble is not considered a limitation and is of no significance to claim construction.” (MPEP §2111.02, citing *Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1305, 51 USPQ2d 1161, 1165 (Fed. Cir. 1999)). Thus, the limitation of claim 38, prior to the amendments set forth in the present reissue application, may be read as merely refining the statement of purpose or intended use that is set forth in the preamble of claim 31.

Moreover, the recitation in question may be considered as failing to further limit claim 31 since the statutory class of invention is a method or process and since the language of claim 38 may be interpreted as (apparatus/system) limitations that fail to further limit the recited *method acts* of claim 31.

Considering claim 14 as another example, the newly submitted Declaration states:

Claim 14 previously included the limitation that “the converging section of the nozzle has a high aspect ratio.” The recitation of a section of a nozzle having a “high aspect ratio” without further limitation may be considered to be vague or indefinite. Claim 14 further included various recitations that might be interpreted as presenting antecedent basis issues (i.e., with regard to the recitation of a “nozzle throat,” the radii of convex and concave surfaces and a “diameter” of the nozzle throat). Claim 14 has been amended to read as follows:

14. (Currently Amended) The fast quench reactor of claim [2] 1, wherein [the nozzle has a converging section and a diverging section respectively leading to and from a restrictive open throat;] the converging section of the nozzle [having] [[has]] provides a high aspect ratio transition with respect to a cross-sectional area of an opening of the outlet end of the reaction chamber and a cross-sectional area of the nozzle throat including [[presented by]] successive [[convex and]] concave and convex surfaces leading into [a] *the* nozzle throat having a circular cross section, [[the]] a radius of the convex surface and a radius of the concave [[surfaces]] surface each being approximately equal to [[the]] a diameter of the

nozzle throat.

The inclusion of the structural limitations in claim 14 provides for proper interpretation of the claim and unambiguous compliance with 35 U.S.C. § 112. Additionally the correction of antecedent basis issues further ensures compliance with 35 U.S.C. § 112. The amendment of claim 14 also corrects the recitation of “successive convex and concave surfaces” to –successive concave and convex surfaces– which is consistent with what is shown and described in the specification so as to ensure compliance with 35 U.S.C. § 112, paragraph 1.

As indicated by the Court of Customs and Patent Appeals (CCPA) in *In re Altenpohl*, 500 F.2d 1151 (CCPA, 1974), issues that could render a claim invalid under 35 U.S.C. § 112 may provide an appropriate basis for a reissue application.

Additionally various claims have been identified in the newly submitted Declaration as correcting antecedent basis issues. One such claim includes claim 71 which recited “the reactant or reactant mixture” although the terms “reactant” and “reactant mixture” had not been previously recited in claim 71 or its base claim.

The CCPA expressly identified antecedent basis issues as providing an appropriate basis for a reissue application in stating that the “[l]ack of antecedent basis in a claim could render it invalid under 35 U.S.C. § 112, second paragraph, and correction of such a defect by reissue should not have to depend on difference in scope of the claim.” (*Id.* at 1156, emphasis added). Moreover, “[i]nasmuch as 35 U.S.C. § 251 is a remedial provision, which should be liberally construed, a patentee should be allowed to correct an error or ambiguity in a claim without having to rely on implication or litigation.” (*Id.* at 1156-1157).

As such, Applicant submits that the errors being corrected as set forth in the Preliminary Amendment filed July 31, 2003, and specifically identified in the presently submitted Declaration provide a proper basis for the present reissue application.

Applicant, therefore, respectfully requests reconsideration and allowance of claims 1 through 14, and 18 through 73.

CONCLUSION

Claims 1 through 14, and 18 through 73 are believed to be in condition for allowance, and an early notice thereof is respectfully solicited. Should the Examiner determine that additional issues remain which might be resolved by a telephone conference, he is respectfully invited to contact Applicants' undersigned attorney.

Respectfully submitted,

/Stephen R. Christian/

Stephen R. Christian
Registration No. 32,687
Attorney for Applicants
P.O. Box 1625
Idaho Falls, ID 83415-3899
Phone: (208) 526-9140
Fax: (208) 526-8339

Date: 3 May 2006